

### CORROSION INFLUENCE ON MICROHARDNESS CHANGES OF NANO-STRUCTURED COMPOSITION COATINGS

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#### ABSTRACT

The report presents results of experiments on introduction of silicon dioxide into nano-structured composition coatings. Nano-structured composition coatings were received at the various density of current: 4-5 mA/cm<sup>2</sup> and investigation of micro-hardness changes in course of corrosion. Nano-structured composition coatings were investigated by PMT-3, loading 100 g. It was established, that micro-hardness was not change in course of corrosion. Nano-structured composition coatings, which were obtained in electrolytes containing 18-14 g/dm<sup>3</sup> SiO<sub>2</sub> and 2-6 g/dm<sup>3</sup> C, have the highest corrosion resistance and

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#### INTRODUCTION

One of modern material science priorities is studying of nano-structured composition electrolytic coatings (nano-CEC) protection properties. This is due to interest in fundamental problems of a multi-component systems and breadth of their application in various fields of engineering, and technology. Therefore, development of new physical processes of composite systems formation and studying mechanical features changing - one of the main problems in materials science. The associate to grow shortage of material resources development metallurgy in the world on XXI century it was directed for effectively to use metals and alloys of steel and commercial alloying, as well as partly taken on ferrous basis - alloys of steel and nano-structured composition coatings. The requirement to construction to materials, to the objects doing of machine, were give qualities on a metallurgy it is founded for use thermally, chemical-thermally and settled on makes by sources energy for surface of object. It was identified that the influence is structurally change first conscience object and this is identified as a necessary process or equal to the becloud surface. The level of the research potential, as a whole level to civilization - this is defines claiming new material. Necessity especially it was reached on high degree in last decade of XX century and in began of XXI century.